Trends in Disease Severity and Health Care Utilization During the Early Omicron Variant Period Compared with Previous SARS-CoV-2 High Transmission Periods — United States, December 2020–January 2022

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Abstract

The B.1.1.529 (Omicron) variant of SARS-CoV-2, the virus that causes COVID-19, was first clinically identified in the United States on December 1, 2021, and spread rapidly. By late December, it became the predominant strain, and by January 15, 2022, it represented 99.5% of sequenced specimens in the United States* (1). The Omicron variant has been shown to be more transmissible and less virulent than previously circulating variants (2,3). To better understand the severity of disease and health care utilization associated with the emergence of the Omicron variant in the United States, CDC examined data from three surveillance systems and a large health care database to assess multiple indicators across three high-COVID-19 transmission periods: December 1, 2020-February 28, 2021 (winter 2020-21); July 15-October 31, 2021 (SARS-CoV-2 B.1.617.2 [Delta] predominance); and December 19, 2021-January 15, 2022 (Omicron predominance). The highest daily 7-day moving average to date of cases (798,976 daily cases during January 9-15, 2022), emergency department (ED) visits (48,238), and admissions (21,586) were reported during the Omicron period, however, the highest daily 7-day moving average of deaths (1,854) was lower than during previous periods. During the Omicron period, a maximum of 20.6% of staffed inpatient beds were in use for COVID-19 patients, 3.4 and 7.2 percentage points higher than during the winter 2020-21 and Delta periods, respectively. However, intensive care unit (ICU) bed use did not increase to the same degree: 30.4% of staffed ICU beds were in use for COVID-19 patients during the Omicron period, 0.5 percentage points lower than during the winter 2020-21 period and 1.2 percentage points higher than during the Delta period. The ratio of peak ED visits to cases (event-to-case ratios) (87 per 1,000 cases), hospital admissions (27 per 1,000 cases), and deaths (nine per 1,000 cases [lagged by 3 weeks]) during the Omicron period were lower than those observed during the winter 2020-21 (92, 68, and 16 respectively) and Delta (167, 78, and 13, respectively) periods. Further, among hospitalized COVID-19 patients from 199 U.S. hospitals, the mean length of stay and percentages who were admitted to an ICU, received invasive mechanical ventilation (IMV), and died while in the hospital were lower during the Omicron period than during previous periods. COVID-19 disease severity appears to be lower during the Omicron period than during previous periods of high transmission, likely related to higher vaccination coverage,† which reduces disease severity (4), lower virulence of the Omicron variant (3,5,6), and infection-acquired immunity (3,7). Although disease severity appears lower with the Omicron variant, the high volume of ED visits and hospitalizations can strain local health care systems in the United States, and the average daily number of deaths remains substantial.§ This underscores the importance of national emergency preparedness, specifically, hospital surge capacity and the ability to adequately staff local health care systems. In addition, being up to date on vaccination and following other recommended prevention strategies are critical to preventing infections, severe illness, or death from COVID-19.